Complete Summary

GUIDELINE TITLE

Clinical practice guideline for the management of cataract among adults.

BIBLIOGRAPHIC SOURCE(S)

Philippine Academy of Ophthalmology. Clinical practice guideline for the management of cataract among adults. Philippines: Philippine Academy of Ophthalmology; 2001. 27 p. [73 references]

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Cataracts

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Risk Assessment
Treatment

CLINICAL SPECIALTY

Family Practice
Geriatrics
Internal Medicine
Ophthalmology

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To provide a general approach to the management of adult patients suspected of having cataracts with or without functional impairment

TARGET POPULATION

Adult patients suspected of having cataracts with or without functional impairment

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnostic Assessment and Initial Management

1. Medical history including age, the presence of hereditary factors, trauma, inflammation, metabolic or nutritional disorders or exposure to radiation, and patient´s assessment of degree of visual impairment and its impact on quality of life.
2. Physical examination to confirm the presence of cataract and to examine the presence of other conditions or prognostic factors that may complicate visual impairment and outcome of cataract management.
3. Objective tests including funduscopy, Snellen´s visual acuity testing and pinhole testing.
4. Cataract classification based on use of the Snellen´s far and near visual testing.
5. Patient education regarding cataract formation and progression, modifiable risk factors, and risks and benefits of surgical and non-surgical treatments.
6. Initial non-surgical treatment including changing a spectacle or contact lens prescription, incorporating filters into the spectacles or wearing brimmed hats or sunglasses to decrease glare.
7. Referral to an ophthalmologist as required.
8. Slit lamp examination, dilated funduscopy and tonometry (by ophthalmologist).
9. Contrast glare sensitivity tests as indicated (by ophthalmologist).
10. Differential diagnoses such as error of refraction, corneal opacities, glaucoma, retinopathy and age-related macular degeneration should be ruled out.
11. Surgical referral as required.

Preoperative Management

1. Obtaining informed patient consent.
2. Preoperative testing including keratometry, biometry, lacrimal apparatus irrigation.
3. Preoperative workup for patients symptomatic or at high risk of developing cardiopulmonary complications.

Surgical Management

1. Phacoemulsification or extracapsular cataract extraction (note: intracapsular cataract extraction is considered but not recommended).

2. Implantation of an intraocular lens (silicone, acrylic, polymethylmethacrylate, hydrogel).
3. Local anesthesia including topical bupivacaine plus intravenous midazolam and fentanyl; intravenous methohexital followed by retrobulbar block consisting of lidocaine, bupivacaine, and hyaluronidase; peribulbar injections; and subconjunctival anesthesia.
4. General anesthesia as indicated.
5. Outpatient surgery (versus in-patient).
6. Second eye surgery as required.

Post-Operative Management

1. Use of topical antibiotics, topical nonsteroidal anti-inflammatory drugs, (e.g., diclofenac, ketorolac), or topical corticosteroids (e.g., prednisolone, prednisolone acetate, dexamethasone).
2. Post-surgical follow-up including refractive evaluation.

MAJOR OUTCOMES CONSIDERED

- Sensitivity and specificity of diagnostic instruments
- Visual acuity
- Vision-related quality of life
- Prevention of progression
- Intraoperative and post-operative complications
- Incidence of adverse drug effects

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

An electronic search using MEDLINE, OVID, Cochrane and other Internet resources was conducted to search for clinical studies limited to humans, any language and all journal publications from 1966 to the present. The citations generated by the searches were examined for relevance to the questions generated on the basis of article titles and/or clinical abstracts available. To supplement the electronic search, references of the full-text articles retrieved were reviewed for other publications that might be relevant to the questions at hand and their own full-text articles retrieved. A manual search of the journals "British Journal of Ophthalmology," "American Journal of Ophthalmology," "Archives of Ophthalmology," and "Ophthalmology" dated 1997 to the present was done to retrieve other relevant articles that could have been missed by the previous search strategies. In addition, the Philippine Academy of Ophthalmology and the Philippine Health Insurance Corporation also submitted a few items not previously identified through the systematic literature review and if deemed to be relevant these were included.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Delphi Method)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

A systematic assessment of the validity of the retrieved full-text articles was done using the appropriate critical appraisal guides formulated by the Family Medicine Research Group which was a modification of the user´s guide of the Evidence-Based Medicine Working Group. Separate guide questions were used for articles on (a) diagnosis, (b) differential diagnosis, (c) harm and causation, (d) prognosis, (e) therapy or prevention, (f) meta-analysis and (g) clinical practice guideline.

Recommendations were then graded according to the strongest evidence found following the Canadian Task Force on Preventive Health Care grading of recommendations.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus (Delphi)

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The Family Medicine Research Group and the Technical Research Panel of the Philippine Academy of Ophthalmology formulated an initial draft. The draft was sent to individual members of the Family Medicine Research Group and the Technical Committee of the Philippine Academy of Ophthalmology for comments and revisions. The final version of the guideline was made after two rounds of consensus using the Delphi method.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Grades of Recommendations

A. Good evidence (at least 1 properly conducted randomized controlled trial) to support the recommendation that the alternative be specifically considered.
B. Fair evidence (evidence from well designed controlled trials without randomization, from well designed cohort or case control studies, comparisons between times and places) the recommendation that the alternative be specifically considered.
C. Poor evidence (descriptive studies, experts' opinion) regarding inclusion or exclusion of the alternative, but recommendations may be made on other grounds.
D. Fair evidence (at least 1 properly conducted randomized controlled trial) to support the recommendation that the alternative be specifically excluded from consideration.
E. Good evidence (evidence from well designed controlled trials without randomization, from well designed cohort or case control studies, comparisons between times and places) the recommendation that the alternative be specifically excluded from consideration.

COST ANALYSIS

A group of researchers in a 1998 cost-benefit study comparing phacoemulsification and extracapsular cataract extraction (ECCE) reported that patients undergoing phacoemulsification presented a frequency of intra- and postoperative complications lower than those undergoing ECCE (odds ratio 0.57, 95%CI 0.37-0.87 and 0.66, 95%CI 0.46-0.96, respectively), specifically for intraoperative iris trauma (3.1% vs 0.3%, p = 0.004), residual posterior capsular opacity (2% vs 0.3%, p = 0.035) and postoperative corneal edema (7.4% vs 3.6%, p = 0.016). Costs of intervention and follow-up were lower for phacoemulsification compared with ECCE (23.9% and 14%, respectively). But global costs were slightly higher for phacoemulsification (4.87%), due to supply costs, which were more than twice those of ECCE. The study went on to conclude that phacoemulsification, when performed by an experienced surgeon, has better clinical outcomes than planned extracapsular extraction, and costs may be lower since supply costs are expected to decrease as the phacoemulsification technique becomes more widespread.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The recommendation grades (A-E) are defined at the end of the "Major Recommendations" field.

Definition

Recommendation 1

In medical practice, cataract is defined as any opacity of the lens that may or may not be associated with visual problems and manifest as an obstruction of the red orange reflex on funduscopy. (Grade C Recommendation)

Recommendation 2

In medical practice the objective of management of cataract is (a) correction of visual impairment, (b) maintenance of quality of life, and (c) prevention of progression. (Grade C Recommendation)

Classification

Recommendation 3

In family practice cataract should be classified according to types based on visual impairment using the Snellen´s far and near visual testing. The classification types are the following (Grade C Recommendation):

- Type I – is characterized by patients with visual acuity better than 20/40 in the affected eye/eyes
- Type II – is characterized by patients having visual acuity of 20/40 or worse in the affected eye/eyes

Physical Examination

Recommendation 4

In family practice, funduscopy (Grade C Recommendation), visual acuity testing and pinhole (Grade B Recommendation) should be done for all patients suspected to have cataracts.

Recommendation 5

For patients suspected of having cataracts, slit lamp examination, dilated funduscopy and tonometry should routinely be done in ophthalmologic practice. (Grade C Recommendation)

Diagnostic Procedures

Recommendation 6

For patients with suspected cataract whose visual acuity is 20/40 or better but referred to ophthalmology for further evaluation contrast glare sensitivity may be done to detect potential problems in nighttime vision. (Grade C Recommendation)

Differential Diagnosis

Recommendation 7

Among patients suspected of having cataracts, the following causes of visual impairment should be ruled out: (a) error of refraction, (b) corneal opacities, (c) glaucoma, (d) retinopathy, and (e) age-related macular degeneration. (Grade B Recommendation)

Prognostic Factors

Recommendation 8

Among patients with cataracts, the following socio-demographic characteristics need to be elicited because it leads to poorer outcomes: (a) age, (b) sex, (c) social strata, (d) education, and (e) race. (Grade B Recommendation)

Recommendation 9

The following clinical entities such as: (a) diabetes, (b) hematologic disorders, (c) rheumatoid disorders, (d) alcohol abuse, (e) ocular trauma and concomitant ocular symptoms, (f) myopia/high error of refraction (EOR), and (g) steroid use should also be elicited because they also lead to poor outcomes. (Grade B Recommendation)

Surgical Approach to Management

Recommendation 10

Among patients with cataracts, any one of the following may be an indication for surgery: (a) patient´s preference and needs, (b) functional disability as measured by Snellen´s´ visual acuity test and modified visual field-14 (VF-14), (c) cataracts with concomitant ocular problems. (Grade C Recommendation)

Recommendation 11

Prior to cataract surgery, the patient must be informed about the benefits, possible side effects and complications, and costs of available alternative surgical and anesthesia procedures. (Grade C Recommendation)

Recommendation 12

Pre-operatively, keratometry, biometry, lacrimal apparatus irrigation (LAI) should routinely be done.

Recommendation 13

Among healthy adult patients scheduled for cataract surgery under local anesthesia, no routine preoperative medical testing is necessary. (Grade A Recommendation)

For patients who are symptomatic and are at high risk of developing cardiopulmonary complications, pre-operative work-up may be done. (Grade C Recommendation)

Recommendation 14

Among patients undergoing cataract surgery, both phacoemulsification and extracapsular cataract extraction (ECCE) are acceptable techniques. (Grade A Recommendation)

Recommendation 15

Among patients who will undergo cataract extraction, implantation of an intraocular lens is recommended. (Grade A Recommendation)

Recommendation 16

While local anesthesia is recommended in majority of patients undergoing cataract surgery, general anesthesia may be used when indicated. (Grade A Recommendation)

Recommendation 17

Among patients who will undergo cataract extraction, surgery on an out-patient basis is recommended. (Grade B Recommendation)

Recommendation 18

Indications for second eye surgery in those with bilateral cataracts are the same as for the first eye. Timing of second eye surgery is best discussed by the surgeon and the patient; however simultaneous cataract extraction is not recommended. (Grade C Recommendation)

Recommendation 19

Post-operatively, topical antibiotics, steroids or nonsteroidal anti-inflammatory drugs (NSAIDs) are recommended. (Grade A Recommendation)

Recommendation 20

Post-surgery, close follow-up with refractive evaluation of the patient is recommended until best corrected vision achieved. (Grade C Recommendation)

<u>Non-Surgical Options</u>

Recommendation 21

Non-surgical management is recommended in the following conditions; (1) patient´s refusal of surgery, (2) no visual disability, (3) best correction results in satisfactory visual function, and (4) surgery is unlikely to improve visual function. (Grade C Recommendation)

Recommendation 22

Refraction that affords the best visual function together with patient education is the only non-surgical option for cataract patients. (Grade C Recommendation)

Health Education

Recommendation 23

Patient education should include the following; (1) advice on modifiable risk factors, (2) advice on eventual need for surgery for non-surgical patients, (3) advice on all available surgical procedures and outcomes, and (4) advice that to date no medications have been proven to retard the progression of age-related cataracts. (Grade C Recommendation)

Referral

Recommendation 24

Patients with Type II cataracts and those with Type I suspected of having other ocular blinding conditions should be referred to an ophthalmologist. (Grade C Recommendation)

Grades of Recommendations

A. Good evidence (at least 1 properly conducted randomized controlled trial) to support the recommendation that the alternative be specifically considered
B. Fair evidence (evidence from well designed controlled trials without randomization, from well designed cohort or case control studies, comparisons between times and places) the recommendation that the alternative be specifically considered.
C. Poor evidence (descriptive studies, experts' opinion) regarding inclusion or exclusion of the alternative, but recommendations may be made on other grounds.
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E. Good evidence (evidence from well designed controlled trials without randomization, from well designed cohort or case control studies, comparisons between times and places) the recommendation that the alternative be specifically excluded from consideration.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Correction of visual impairment
- Maintenance of quality of life
- Prevention of progression of cataract

Subgroups Most Likely to Benefit:

Patients with no ocular or medical co-morbidities

POTENTIAL HARMS

Lacrimal Apparatus Irrigation

One study has questioned the routine performance of lacrimal apparatus irrigation because in some instances it has led to worsening of the microbial flora and graver infection.

Surgical Complications of Cataract Extraction Procedures

- Vitreous loss
- Retinal detachment
- Intraocular lens malposition or dislocation
- Poor visual outcome (poor visual acuity)
- Postoperative inflammation or endophthalmitis
- Intraocular iris trauma
- Residual posterior capsular opacity
- Postoperative corneal edema
- Atonic pupils

Complications of Intraocular Lens Implants

- In general, studies have shown the similarity of silicone, acrylic and polymethylmethacrylate (PMMA) lens implants in terms of post-operative inflammation, displacement, and rate of astigmatism.
- One randomized, prospective trial showed that patients with polyacrylic intraocular lens implants were less likely to require Nd:YAG capsulotomy and at three years, polyacrylic lens were also associated with less posterior capsule opacification compared to polymethylmethacrylate and silicone.
- Another randomized, prospective trial showed hydrogel lens implants were associated with a higher degree of posterior capsule opacification and laser capsulotomies than polymethylmethacrylate and silicone lens.

Anesthesia Side Effects

- One study reported a higher incidence of nausea and sore throat with general anesthesia compared with local anesthesia; however, eye bruising was higher with local anesthesia.

- One prospectively randomized study showed that topical anesthesia was associated with significantly more discomfort both during administration of anesthesia and post-operatively.

Subgroups Most Likely to Be Harmed:

Patients with ocular or medical co-morbidities (e.g., high myopia, diabetes mellitus)

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Dissemination will be done by publishing the guideline and making it available via the Internet. The Philippine Academy of Ophthalmology and Family Medicine Research Group will be responsible to disseminate the guidelines to other ophthalmologists, family medicine specialists and general practitioners via an interactive lecture workshop session.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Philippine Academy of Ophthalmology. Clinical practice guideline for the management of cataract among adults. Philippines: Philippine Academy of Ophthalmology; 2001. 27 p. [73 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2001

GUIDELINE DEVELOPER(S)

Family Medicine Research Group, UP-PGH - Academic Institution
Philippine Academy of Ophthalmology - Medical Specialty Society

GUIDELINE DEVELOPER COMMENT

The development of this clinical practice guideline was a joint project of the Philippine Academy of Ophthalmology, and the Family Medicine Research Group of UP-PGH, Manila.

SOURCE(S) OF FUNDING

The Philippine Health Insurance Corporation and the Christoffel-Blindenmission provided financial assistance. However, the Philippine Health Insurance Corporation and the Christoffel-Blindenmission did not exert any influence in the formulation of this guideline.

GUIDELINE COMMITTEE

Technical Research Panel

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Technical Research Panel Members

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

An update is not in progress at this time.

GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available from the Philippine Academy of Ophthalmology, 3rd floor Philippine College of Surgeon´s Bldg, 992 North Edsa 1105 Quezon City, Metro Manila, Philippines; Tel. (632) 9253789.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

The following is available:

- The truth about cataract surgery. Philippines: Philippine Academy of Ophthalmology, 1 p.

Print copies: Available from the Philippine Academy of Ophthalmology, 3rd floor Philippine College of Surgeon's Bldg, 992 North Edsa 1105 Quezon City, Metro Manila, Philippines; Tel. (632) 9253789.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on February 26, 2002. The information was verified by the guideline developer as of April 11, 2002.

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